

What is claimed is:

1. A cellulose ester film comprising a property of:
a peak of infrared absorption spectrum being in a range from
5 520 cm^{-1} to 480 cm^{-1} .

2. A cellulose ester film as claimed in claim 1, further
comprising a property of:
retardation in thickness direction (R_{th}) being at least
10 35 nm.

3. A cellulose ester film as claimed in claim 2, further
comprising a property of:
retardation in-plane (R_e) being in a range of -50 nm to 5
15 nm, wherein a feeding direction in producing said cellulose ester
film is a positive direction.

4. A cellulose ester film as claimed in claim 3, wherein
the thickness of said cellulose ester film is in a range of 35
20 μm to 65 μm .

5. A cellulose ester film as claimed in claim 4, wherein
said cellulose ester is cellulose acylate.

25 6. A cellulose ester film produced by casting a dope containing
cellulose ester and a solvent, said cellulose ester film
comprising a property of:
a tear strength being at least 6g.

7. A cellulose ester film as claimed in claim 6, further comprising a property of:

a peak of infrared absorption spectrum being in a range
5 of 520 cm^{-1} to 480 cm^{-1} .

8. A cellulose ester film as claimed in claim 7, further comprising a property of:

retardation in thickness direction (Rth) being at least
10 35 nm.

9. A cellulose ester film as claimed in claim 8, further comprising a property of:

retardation in-line (Re) being in a range of -50 nm to 5
15 nm, wherein a feeding direction in producing said cellulose ester film being a positive direction.

10. A cellulose ester film as claimed in claim 9, wherein said cellulose ester film is in a range of 35 μm to 65 μm thickness.
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11. A cellulose ester film as claimed in claim 10, wherein said cellulose ester is cellulose acylate.

12. A producing method of a cellulose ester film comprising
25 the steps of:

A. casting a dope on a substrate from a casting die to form a gel-like film, said dope containing a solvent and solid contents such as cellulose ester;

B. peeling said gel-like film from said substrate;

C. regulating temperature of said gel-like film in a range of 80 °C to 140 °C when the content of said solvent in said gel-like film is in a range of 20 wt.% to 100 wt.% to said solid contents, said gel-like film forming said cellulose ester film after dry.

13. A producing method of a cellulose ester film comprising the steps of:

10 A. casting a dope on a substrate from a casting die to form a gel-like film, said dope containing a solvent and solid contents such as cellulose ester;

B. peeling said gel-like film from said substrate;

15 C. applying tension of 25 kg/m to 250 kg/m in a widthwise direction of said gel-like film when the content of said solvent in said gel-like film is in a range of 20 wt% to 100 wt.% to said solid contents, said gel-like film forming said cellulose ester film after dry.

20 14. A producing method of a cellulose ester film as claimed in claim 13, temperature of said gel-like film ranges from 80 °C to 140 °C in said step C.

25 15. A producing method of a cellulose ester film as claimed in claim 14, said dope is cooled to have a temperature of at most 5 °C in said step A.

16. A producing method of a cellulose ester film, an infrared

absorption spectrum of said cellulose ester film having a peak in a range of 520 cm^{-1} to 480 cm^{-1} , a tear strength being at least 6g, and retardation in thickness direction (Rth) being at least 35 nm, said producing method comprising the steps of:

5 A. cooling a substrate to have temperature at most $5\text{ }^{\circ}\text{C}$;

 B. casting a dope on said substrate from a casting die section to form a gel-like film, said dope containing a solvent and solid contents such as cellulose ester;

 C. peeling said gel-like film out of said substrate;

10 D. applying tension in a range of 25 kg/m to 250 kg/m to a widthwise direction of said gel-like film when the content of said solvent in said gel-like film is in a range of 20 wt% to 100 wt.% to said solid contents, said gel-like film forming said cellulose ester film after dry.

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 17. A producing method of a cellulose ester film as claimed in claim 16, wherein temperature of said gel-like film ranges from $80\text{ }^{\circ}\text{C}$ to $140\text{ }^{\circ}\text{C}$ in said step D.

20 18. A producing method as claimed in claim 17, further comprising the steps of:

 measuring infrared absorbance in said cellulose ester film after said step D to obtain a peak intensity in a range of 520 cm^{-1} to 480 cm^{-1} ;

25 adjusting temperature or tension of said gel-like film of said step D in accordance with said peak intensity.

 19. A producing method of a cellulose ester film as claimed

in claim 17, wherein said gel-like film has a multi-layer structure.

20. A producing method of a cellulose ester film as claimed
5 in claim 19, wherein said casting die section is a multimanifold casting die having plural manifolds.

21. A producing method of a cellulose ester film as claimed
in claim 19, wherein said casting die section is a casting die
10 having a feed block on an upstream side to a flow of said dope.

22. A producing method of a cellulose ester film as claimed
in claim 19, wherein said casting die section includes plural
casting dies.
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23. A producing method of a cellulose ester film as claimed
in claim 19, wherein the thickness of said cellulose ester film
is in a range of 20 μm to 120 μm .

20 24. A producing method of a cellulose ester film as claimed
in claim 23, wherein said cellulose ester is cellulose acylate.

25. A producing method of a cellulose ester film as claimed
in claim 24, wherein said cellulose ester film is used for a
25 protective film for a polarizing filter.

26. A producing method of a cellulose ester film as claimed
in claim 24, wherein said cellulose ester film is used for an

optical functional film.

27. A producing method of a cellulose ester film as claimed
in claim 24, wherein said cellulose ester film is used for a
5 polarizing filter.

28. A producing method of a cellulose ester film as claimed
in claim 24, wherein said cellulose ester film is used for a
liquid crystal display device.

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29. A producing method of a cellulose ester film, said
cellulose ester film being produced by casting a dope containing
a solvent and solid contents such as cellulose ester to form
a gel-like film and by drying said gel-like film with applying
15 tension on it, said producing method comprising:

measuring infrared absorbance in said cellulose ester film
during continuous production to obtain a peak intensity in a
range of 520 cm^{-1} to 480 cm^{-1} ; and

adjusting temperature of said gel-like film for drying and
20 said tension of said gel-like film in accordance with said peak
intensity.

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